ABSTRACT

An optical analyzer and method for measuring optical properties of optical signals utilizes a heterodyne architecture to measure spectral amplitude and phase of a periodically modulated input optical signal, such as an optical signal from a periodically modulated distributed feedback (DFB) laser. The spectral amplitude and phase measurements are derived from a heterodyne signal, which is produced by combining and mixing the input optical signal and a local oscillator (LO) signal. The optical spectrum that is reconstructed from the heterodyne signal includes "inner" spectral peaks that contain phase information of the input optical signal. The inner spectral peaks may be produced by an optical or electrical mixing technique. The spectral phase of the input optical signal is recovered from the inner spectral peaks of the reconstructed optical spectrum.